

Exploring Arizona's Biotic Communities

Lesson 3: A Day in the Life ...

LESSON OVERVIEW

In this lesson, students will explore Arizona's biotic communities by using online resources to research an animal or plant that might be found in a particular community. Once the research is complete, they write a narrative essay about their plant or animal.

SUGGESTED GRADE LEVELS

- 6 – 10

ENDURING UNDERSTANDINGS

- Plants and animals are adapted to survive in the environment in which they live.

OBJECTIVES

Students will:

- Research online and in texts, determining relevant information and taking accurate notes.
- Put researched information in their own words.
- Write a narrative essay.

ARIZONA DEPARTMENT OF EDUCATION STANDARDS

Grade	Reading	Writing	Social Studies
6	S3-C1-06; S3-C1-09	S1-C3-01; S1-C3-07; S1-C4-04; S2-C1-01; S2-C1-03; S2-C1-04; S2-C2-03; S2-C2-05; S2-C3-02; S2-C3-04; S2-C4-01; S2-C4-03; S2-C5-02; S3-C1-01	None
7	S3-C1-06; S3-C1-10		None
8	S3-C1-06; S3-C1-10		None
9	S3-C1-04; S3-C1-08	S1-C3-01; S1-C3-07; S1-C4-04; S2-C1-03; S2-C1-05; S2-C2-03; S2-C2-05; S2-C3-02; S2-C3-03; S2-C4-01; S2-C4-02; S2-C4-03; S2-C5-03	None
10	S3-C1-04; S3-C1-07; S3-C1-08		

Note: The full text of these standards can be found in Appendix A.



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TIME FRAME

- 4 days (1 day of in-class research, 3 days of individual work outside of class)

MATERIALS

- *Student Assignment Cards*
- *Life in a Biome* Newsletter/Rubric (one per student)
- *Author Self-Reflection* (one per student)
- *Peer Editing Guide* (one per student)
- Access to Internet for individual students
- Grade-level-appropriate print materials from your library
- Copies of scoring rubric (1 per student)

TEACHER PREPARATION

- Review suggested Web sites to ensure their appropriateness at the grade level being taught.
- Ask your librarian to assemble a collection of print materials for students to use in their research.
- Create heterogeneous student teams. These may be the same ones used in Lesson 1: Mapping Biotic Communities.

SUGGESTED PROCEDURES

1. Students should be familiar with the online information about Biotic Communities before this lesson. See lessons 1 and 2 for more information.
2. Assign students to a "Biotic Community" for this activity. Due to its lack of plants and animals, exclude "Alpine Tundra." Adjust the number of groups as necessary for your class size. For example, you may need to combine all of the grasslands or all of the deserts into one category.
3. Using the prepared animal and plant "cards," students draw a card and research that member of their biotic community. Allow students to trade cards within their group if you like. Be sure each biotic community includes at least two plants and two animals.
4. Remind students about research procedures and note-taking expectations for their grade level.
5. Hand out the *Life in a Biome* newsletter and rubric. Assign the essay topic: "A Day in the Life of _____." Students use the information they learn while researching their plant or animal to write a narrative essay describing the climate, terrain, and other animal and plant encounters their plant or animal might have during a typical day in that biotic community.
6. Make sure the students understand the requirements outlined in the rubric.
7. Review (or introduce) formatting requirements for a bibliography in the style you prefer (MLA or APA; information on both is available online). Be sure the students understand that information must be put into their own words, not quoted from their source!



8. Allow several days research time in or out of class. You might schedule time in the library the first day to allow students to locate print information. Schedule time on the computer for Internet searches. The Web sites included are only a few of many available. You may want to pre-select others (or include a brief lesson on validity and reliability online) to ensure quality information. NOTE: If you plan on using Lesson 4 – Which Team are You On, you should alert students to be looking for photographs or drawings of their plant or animal.
9. Set a peer review day for each team to edit/critique their teammates' papers. Use a Peer Editing Guide to help students make specific suggestions for improvement. Emphasize that the author is the ONLY one who can make changes or corrections to the paper, but encourage authors to look seriously at the comments. For more information on peer editing, see Appendix B.
10. Set a due date for revised essays. Before you collect the paper, ask students to reflect on the essay by answering three questions:
 - a. What did you learn by writing this essay?
 - b. What do you like best about the paper?
 - c. What next?
11. Students should write their answers on the back of the last page or on another piece of paper they attach to their essay. Allow teammates a final double-check for completeness. The peer editing and rough draft should be turned in along with the final draft.

ASSESSMENT

- "A Day in the Life ..." essay using the rubric provided
- Self-assessment

EXTENSIONS

- Students might write a more formal research paper using endnotes and a list of works cited.
- Students could partner with another whose animal or plant is related in some way and create a skit illustrating the relationship.
- Make a class booklet with the plant and animal stories arranged in biotic communities. Include drawings or photographs of each one.
- "Adopt" another class (preferably of a younger grade level) and have the students read their stories to the children.



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Appendix A: Arizona Department of Education Standards – Full Text

Reading Standards

Grade	Strand	Concept	Performance Objective
6	3	1 – Expository Text	6 – Locate appropriate print and electronic reference sources (e.g., encyclopedia, atlas, almanac, dictionary, thesaurus, periodical, CR-ROM, Web site) for a specific purpose 9 – Draw valid conclusions about expository text, supported by text evidence
7	3	1 – Expository Text	6 – Locate appropriate print and electronic reference sources (e.g., encyclopedia, atlas, almanac, dictionary, thesaurus, periodical, CR-ROM, Web site) for a specific purpose 10 – Make relevant inferences about expository text, supported by text evidence
8	3	1 – Expository Text	6 – Locate appropriate print and electronic reference sources (e.g., encyclopedia, atlas, almanac, dictionary, thesaurus, periodical, CR-ROM, Web site) for a specific purpose 10 – Make relevant inferences about expository text, supported by text evidence
9	3	1 – Expository Text	4 – Organize information from both primary and secondary sources by taking notes, outlining ideas, paraphrasing information; and by making charts, conceptual maps, learning logs, and/or timelines 8 – Support conclusions drawn from ideas and concepts in expository text
10	3	1 – Expository Text	4 – Organize information from both primary and secondary sources by taking notes, outlining ideas, paraphrasing information; and by making charts, conceptual maps, learning logs, and/or timelines for a research document of other assigned task 7 – Make relevant inferences by synthesizing concepts and ideas from a single reading selection 8 – Support conclusions drawn from ideas and concepts in expository text

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Writing Standards

Grade	Strand	Concept	Performance Objective
6, 7, 8	1	3 – Revising	1 – Evaluate the draft for use of ideas and content, organization, voice, word choice, and sentence fluency 7 – Apply appropriate tools or strategies (e.g., peer review, checklists, rubrics) to refine the draft
		4 – Editing	4 – Apply appropriate tools or strategies (e.g., peer review, checklists, rubrics) to edit the draft
	2	1 – Ideas and Content	1 – Use clear, focused ideas and details to support the topic 3 – Develop a sufficient explanation or exploration of the topic 4 – Include ideas and details that show original perspective
		2 – Organization	3 – Place details appropriately to support the main idea 5 – Construct paragraphs by arranging sentences with an organizing principle (e.g., to develop a topic, to indicate a chronology)
		3 – Voice	2 – Convey a sense of identity through originality, sincerity, liveliness, or humor appropriate to the topic and type of writing 4 – Choose appropriate voice (e.g., formal, informal, academic discourse) for the audience and purpose
		4 – Word Choice	1 – Use accurate, specific, powerful words that effectively convey the intended message 3 – Use vocabulary that is original, varied, and natural
		5 – Sentence Fluency	2 – Create sentences that flow together and sound natural when read aloud
	3	1 – Expressive	1 – Write a narrative that includes: a. an engaging plot based on imagined or real ideas, observations, or memories of an event of experience b. effectively developed characters c. a clearly described setting d. dialogue, as appropriate e. figurative language, or descriptive words and phrases to enhance style and tone

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Writing Standards Continued

Grade	Strand	Concept	Performance Objective
High School	1	3 – Revising	1 – Evaluate the draft for use of ideas and content, organization, voice, word choice, and sentence fluency 7 – Apply appropriate tools or strategies (e.g., peer review, checklists, rubrics) to refine the draft
		4 – Editing	4 – Apply appropriate tools or strategies (e.g., peer review, checklists, rubrics) to edit the draft
	2	1 – Ideas and Content	3 – Provide sufficient, relevant and carefully selected details for support 5 – Include ideas and details that show original perspective and insights
		2 – Organization	3 – Place details appropriately to support the main idea 5 – Employ a variety of paragraphing strategies (e.g., topical, chronological, spatial) appropriate to application and purpose
		3 – Voice	2 – Convey a sense of identity through originality, sincerity, liveliness, or humor appropriate to the topic and type of writing 3 – Choose appropriate voice (e.g., formal, informal, academic discourse) for the application
		4 – Word Choice	1 – Use accurate, specific, powerful words and phrases that effectively convey the intended message 2 – Use vocabulary that is original, varied, and natural 3 – Use words that evoke clear images
		5 – Sentence Fluency	3 – Demonstrate a flow that is natural and powerful when read aloud



Appendix B: Peer Editing

There are a number of successful ways to conduct peer editing in your classroom. One method is described below. These procedures can be used by themselves or in conjunction with the “Peer Editing” student worksheet included.

1. Students get together in their biotic community teams. Give each teammate a different color highlighter or colored pencil to use in editing. Before you begin any peer editing, it is critical that all students understand the importance of sincere, careful editing. The idea is to improve everyone’s skills (and grade!) by offering helpful criticism.
2. Students should complete the *Author Self-Reflection* sheet or answer similar questions on a blank sheet of paper.
3. Students pass their papers to their right and read both the author’s comments and the paper. This continues until each paper is returned to the author with all the editors’ comments.
4. On the cover sheet the author has attached, each editor responds to the following prompts:
 - a. Write a sentence describing what you like about the essay.
 - b. Question the author about any area that is not clear to you.
 - c. What can the author do to improve this paper? Be specific.
 - d. Respond directly to the author’s stated concerns.
5. Finally, each editor focuses on a specific writing trait by answering the following questions:
 - a. Editor #1: Has the author described the terrain, climate, and other animals and plants in sufficient, entertaining detail? Underline (or highlight) words and sentences that do an especially good job of description.
 - b. Editor #2: Has the author described a typical “day in the life”? Underline actions that are characteristic of the plant or animal.
 - c. Editor #3: Does the author use a *voice* that is appropriate and effective for his/her plant or animal? Underline words that reveal the author’s unique voice.
6. Authors get their own paper back on the final pass. They should review each editor’s comments, clarify what is meant if they are not sure, and thank each other for their help.
7. Authors take the peer editing sheet and their rough draft home to revise. They may choose to accept or reject their editors’ suggestions.
8. When the final draft is turned in, these papers should be included.



Appendix C: Suggested Research Web Sites

Below is the list of additional plants and animals to include in each biotic community as well as some suggested Web sites that the students may use for research. It is recommended that you review the Web sites before using them with students.

FIR FOREST

Arizona Bugbane

- http://www.azgfd.gov/pdfs/w_c/hdms/Plants/Cimiariz.fo.pdf
- http://www.azgfd.gov/w_c/edits/images/cimiariz.gif

Arizona Frog Orchid

- http://www.azgfd.gov/w_c/edits/documents/Coelvivi.d.pdf
- http://www.azgfd.gov/w_c/edits/images/coelvivi.gif

Mexican Spotted Owl

- http://www.azgfd.gov/w_c/edits/documents/Strioclu.fi.pdf
- http://www.azgfd.gov/w_c/edits/images/strioclu.gif

Hammond's Flycatcher

- http://www.azgfd.gov/w_c/edits/documents/Empihamm.d.pdf
- <http://www.bird-friends.com/BirdPage.php?name=Hammond's%20Flycatcher>

PINE FOREST

Western Fairy Slipper

- http://www.azgfd.gov/w_c/edits/documents/Calybulb.d.pdf
- http://www.azgfd.gov/w_c/edits/images/calybulb.gif

Nevin Bird's-beak

- http://www.azgfd.gov/w_c/edits/documents/Cordnevi.d.pdf
- http://www.azgfd.gov/w_c/edits/images/cordnevi.gif

Long-eared Myotis

- http://www.azgfd.gov/w_c/edits/documents/Myotevot.fi.pdf
- http://www.azgfd.gov/w_c/edits/images/myotevot.gif

Mexican Gray Wolf

- http://www.azgfd.gov/w_c/edits/documents/Caniluba.d.pdf
- <http://www.phoenixzoo.org/zoo/animals/facts/mexicanwolf.asp>

PINYON-JUNIPER

Huachuca Milk-vetch

- http://www.azgfd.gov/pdfs/w_c/hdms/Plants/Astrhypo.fo.pdf
- http://www.azgfd.gov/w_c/edits/images/astrhypo.gif

Roaring Springs Prickly-poppy

- http://www.azgfd.gov/w_c/edits/documents/Argeariz.fi.pdf
- http://www.azgfd.gov/w_c/edits/images/argeariz.gif

Arizona Night Lizard

- http://www.azgfd.gov/w_c/edits/documents/Xantariz.d_000.pdf
- http://www.azgfd.gov/w_c/edits/images/xantariz.gif

Narrow-headed Garter Snake

- http://www.azgfd.gov/w_c/edits/documents/Thamrufi.di_001.pdf
- http://www.azgfd.gov/w_c/edits/images/thamrufi_000.gif



OAK-PINE

Chihuahuan Stickseed

- http://www.azgfd.gov/pdfs/w_c/hdms/Plants/Hackursi.fo.pdf
- http://www.azgfd.gov/w_c/edits/images/hackursi.gif

Woodland Spurge

- http://www.azgfd.gov/w_c/edits/documents/Euphmacr.d.pdf
- http://www.azgfd.gov/w_c/edits/images/euphmacr.gif

Berylline Hummingbird

- http://www.azgfd.gov/w_c/edits/documents/Amazbery.D.pdf
- http://www.azgfd.gov/w_c/edits/images/amazbery.gif

Elegant Trogon

- http://www.azgfd.gov/w_c/edits/documents/Trogeleg.d.pdf
- http://www.azgfd.gov/w_c/edits/images/trogeleg.gif

OAK WOODLAND

Large-flowered Blue Star

- http://www.azgfd.gov/w_c/edits/documents/Amsogran.fo.pdf
- http://www.azgfd.gov/w_c/edits/images/amsogran.gif

Chiltepin

- http://www.azgfd.gov/w_c/edits/documents/Capsangl.fo.pdf
- http://www.azgfd.gov/w_c/edits/images/capsangl.gif

Yellow-nosed Cotton Rat

- http://www.azgfd.gov/w_c/edits/documents/Sigmochr.di.pdf
- http://www.azgfd.gov/w_c/edits/images/sigmochr.gif

Acorn Woodpecker

- <http://www.birding.com/572aw.asp>
- <http://www.bird-friends.com/BirdPage.php?name=Acorn%20Woodpecker>

CHAPARRAL

Flannel Bush

- http://www.azgfd.gov/w_c/edits/documents/Fremcali.d.pdf
- http://www.azgfd.gov/w_c/edits/images/fremcali.gif

Arizona Agave

- http://www.azgfd.gov/w_c/edits/documents/Agavariz.fo.pdf
- http://www.azgfd.gov/w_c/edits/images/agavariz.gif

Madrean Alligator Lizard

- <http://www.reptilesfaz.com/Lizards-Subpages/h-e-kingii.html>
- <http://www.anapsid.org/gerrhont.html>

Coyote

- http://www.azgfd.gov/h_f/game_coyote.shtml
- <http://www.phoenixzoo.org/zoo/animals/facts/coyote.asp>



MOUNTAIN GRASSLAND

Kaibab Beardtongue

- http://www.azgfd.gov/w_c/edits/documents/Penspseu.fi.pdf
- http://www.azgfd.gov/w_c/edits/images/penspseu.gif

Redflower Onion

- http://www.azgfd.gov/w_c/edits/documents/Allirhiz.d.pdf
- http://www.azgfd.gov/w_c/edits/images/allirhiz.gif

White Mountains Ground Squirrel

- http://www.azgfd.gov/w_c/edits/documents/Spetrmo.d.pdf
- http://www.azgfd.gov/w_c/edits/images/spetrmo.gif

New Mexican Jumping Mouse

- http://www.azgfd.gov/w_c/edits/documents/Zapuhulu.d.pdf
- http://www.azgfd.gov/w_c/edits/images/zapuhulu_000.gif

PLAINS GRASSLAND

Paper-spined Cactus

- http://www.azgfd.gov/w_c/edits/documents/Pedipapy.d_000.pdf
- http://www.azgfd.gov/w_c/edits/images/pedipapy_000.gif

Peebles Blue Star

- http://www.azgfd.gov/w_c/edits/documents/Amsopeeb.d.pdf
- http://www.azgfd.gov/w_c/edits/images/amsopeeb.gif

Black-tailed Prairie Dog

- http://www.azgfd.gov/w_c/edits/documents/Cynoludo.fi.pdf
- http://www.desertusa.com/dec96/du_pdogs.html

Milksnake

- http://www.azgfd.gov/w_c/edits/documents/Lamptria.d_001.pdf
- http://www.azgfd.gov/w_c/edits/images/lamptria_000.gif

DESERT GRASSLAND

Pima Indian Mallow

- http://www.azgfd.gov/pdfs/w_c/hdms/Plants/Abutpari.fo.pdf
- http://www.azgfd.gov/w_c/edits/images/abutpari.gif

Arid Throne Fleabane

- http://www.azgfd.gov/pdfs/w_c/hdms/Plants/Erigaris.fo.pdf
- http://www.azgfd.gov/w_c/edits/images/erigaris.gif

Mexican Hog-nosed Snake

- http://www.azgfd.gov/w_c/edits/documents/Hetenake.d_001.pdf
- http://www.azgfd.gov/w_c/edits/images/hetenake_000.gif

Masked Bobwhite

- http://www.azgfd.gov/w_c/edits/documents/Coliviri.d.pdf
- http://www.azgfd.gov/w_c/edits/images/coliviri.gif



GREAT BASIN DESERT

Fredonia Catseye

- http://www.azgfd.gov/w_c/edits/documents/Crypsemi.d_000.pdf
- http://www.azgfd.gov/w_c/edits/images/crypsemi_000.gif

Whiting Dalia

- http://www.azgfd.gov/w_c/edits/documents/PSORTHWH.fi_000.pdf
- http://www.azgfd.gov/w_c/edits/images/psorthwh_000.gif

New Mexico Banner-tailed Kangaroo Rat

- http://www.azgfd.gov/w_c/edits/documents/Dipospba.d.pdf
- http://www.desertusa.com/aug96/du_krat.html

Pygmy Rabbit

- http://www.azgfd.gov/w_c/edits/documents/Sylvidah.d.pdf
- http://www.glenoakzoo.org/pygmy_rabbit_fact.htm

MOHAVE DESERT

Grand Canyon Flaveria

- http://www.azgfd.gov/w_c/edits/documents/Flavmcdo.d.pdf
- http://www.azgfd.gov/w_c/edits/images/flavmcdo.gif

Brittlebush

- http://www.desertusa.com/april96/du_britbush.html
- <http://www.fs.fed.us/database/feis/plants/shrub/encfar/all.html>

Kit Fox

- http://www.azgfd.gov/h_f/game_foxes.shtml
- <http://www.southwestwildlife.org/factsheets/kitfox.htm>

Desert Iguana

- http://www.desertusa.com/april97/du_desiguana.html
- http://www.desertmuseum.org/books/nhsd_desert_iguana.html

SONORAN DESERT

Crucifixion Thorn

- http://www.azgfd.gov/w_c/edits/documents/Castemor.d.pdf
- http://www.desertusa.com/magdec97/dec_pap/du_cruxthorn.html

Gander's Cryptantha

- http://www.azgfd.gov/w_c/edits/documents/Crypgand.d.pdf
- http://www.azgfd.gov/w_c/edits/images/crypgand.gif

Crested Caracara

- http://www.azgfd.gov/w_c/edits/documents/Caracher.d.pdf
- http://www.azgfd.gov/w_c/edits/images/caracher.gif

Gila Monster

- http://www.azgfd.gov/w_c/edits/documents/Helosuci.d_001.pdf
- http://www.azgfd.gov/w_c/edits/images/helosuci_000.gif



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CHIHUAHUAN DESERT

Cob Corycactus

- http://www.azgfd.gov/w_c/edits/documents/Escotube.d.pdf
- http://www.azgfd.gov/w_c/edits/images/escotube.gif

Lechuguilla

- <http://www.fs.fed.us/database/feis/plants/shrub/agalec/all.html>
- <http://www.explorenm.com/plants/Agavaceae/Agave/lechuguilla/>

Greater Roadrunner

- <http://www.phoenixzoo.org/zoo/animals/facts/roadrunner.asp>
- http://www.desertmuseum.org/books/nhsd_roadrunner_new.html

Black-capped Gnatcatcher

- http://www.azgfd.gov/w_c/edits/documents/Polinigr.d.pdf
- http://www.azgfd.gov/w_c/edits/images/polinigr.gif



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Appendix D: Worksheets and Overheads

The pages that follow contain the worksheets listed below:

- A. *Student Assignment Cards* – Cards with basic information about additional plants and animals that can be given to each student as they begin their research (7 pages)
- B. *“Life in a Biome” Newsletter/Scoring Rubric* – A double-sided handout to introduce the narrative essay to the students (2 pages)
- C. *Author Self-Reflection* – One method students can use to reflect on their own writing before turning in the final draft (1 page)
- D. *Peer Editing Guide* – A tool to guide students through the peer editing process (1 page)

